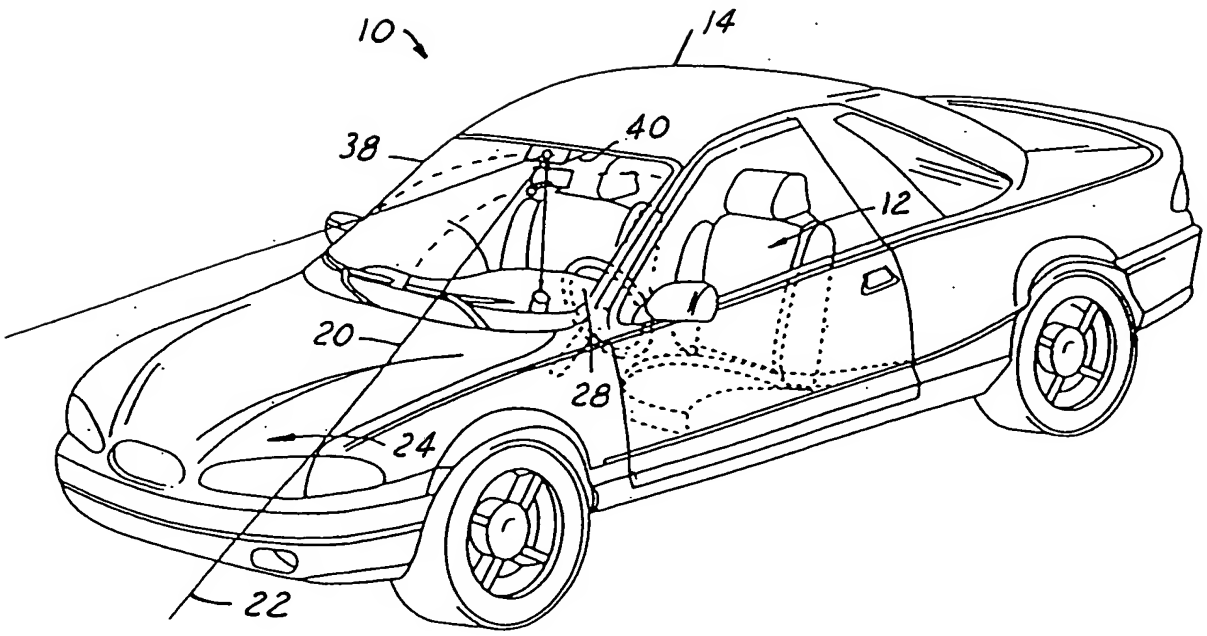
10
14
38
40
12
20
28
24
22

FIG. 1

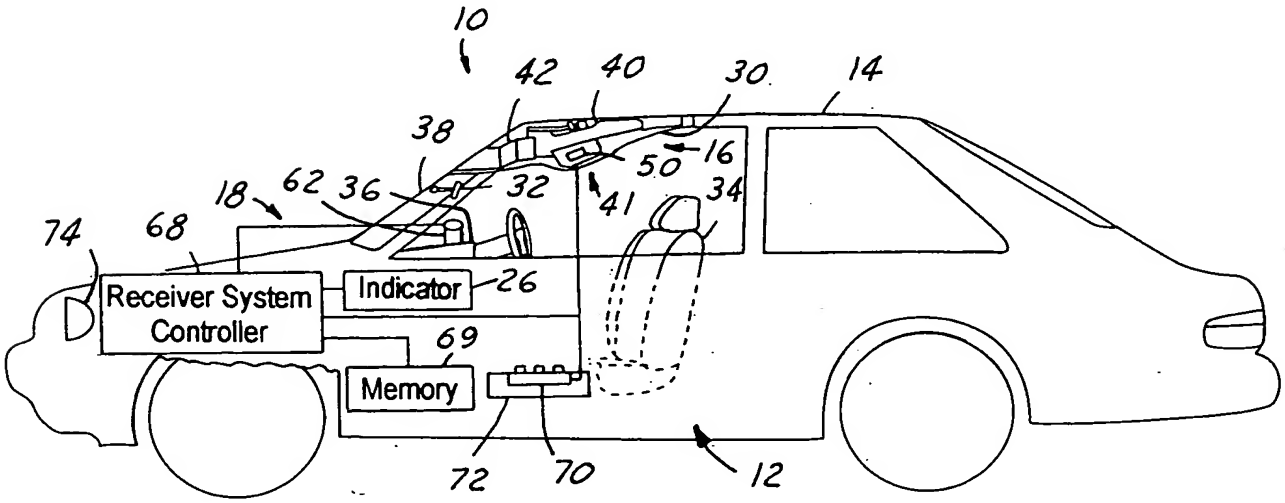
10
42
40
30
14
38
16
50
18
62
36
32
41
34
74
68
Receiver System Controller
Indicator
26
69
Memory
72
70
12

FIG. 2

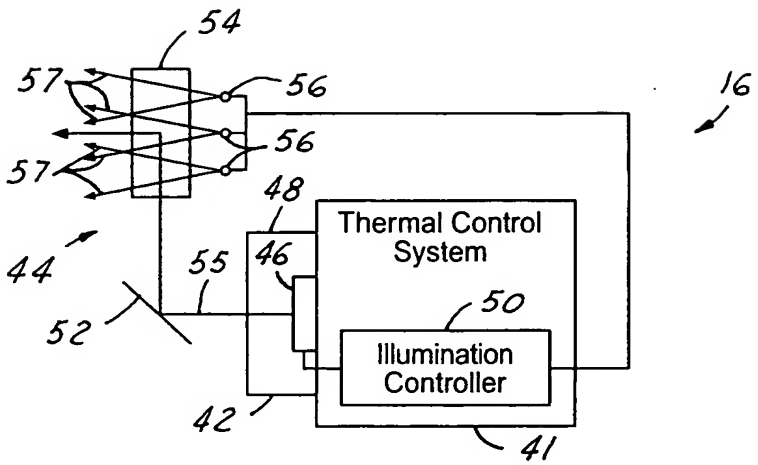

FIG.3

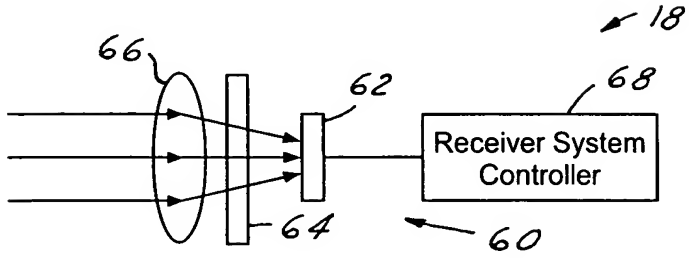

FIG.4

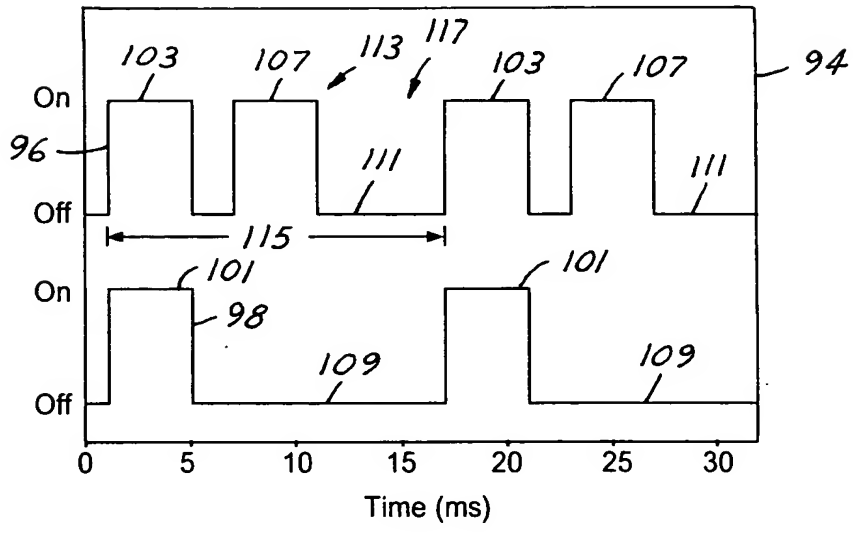

FIG.7

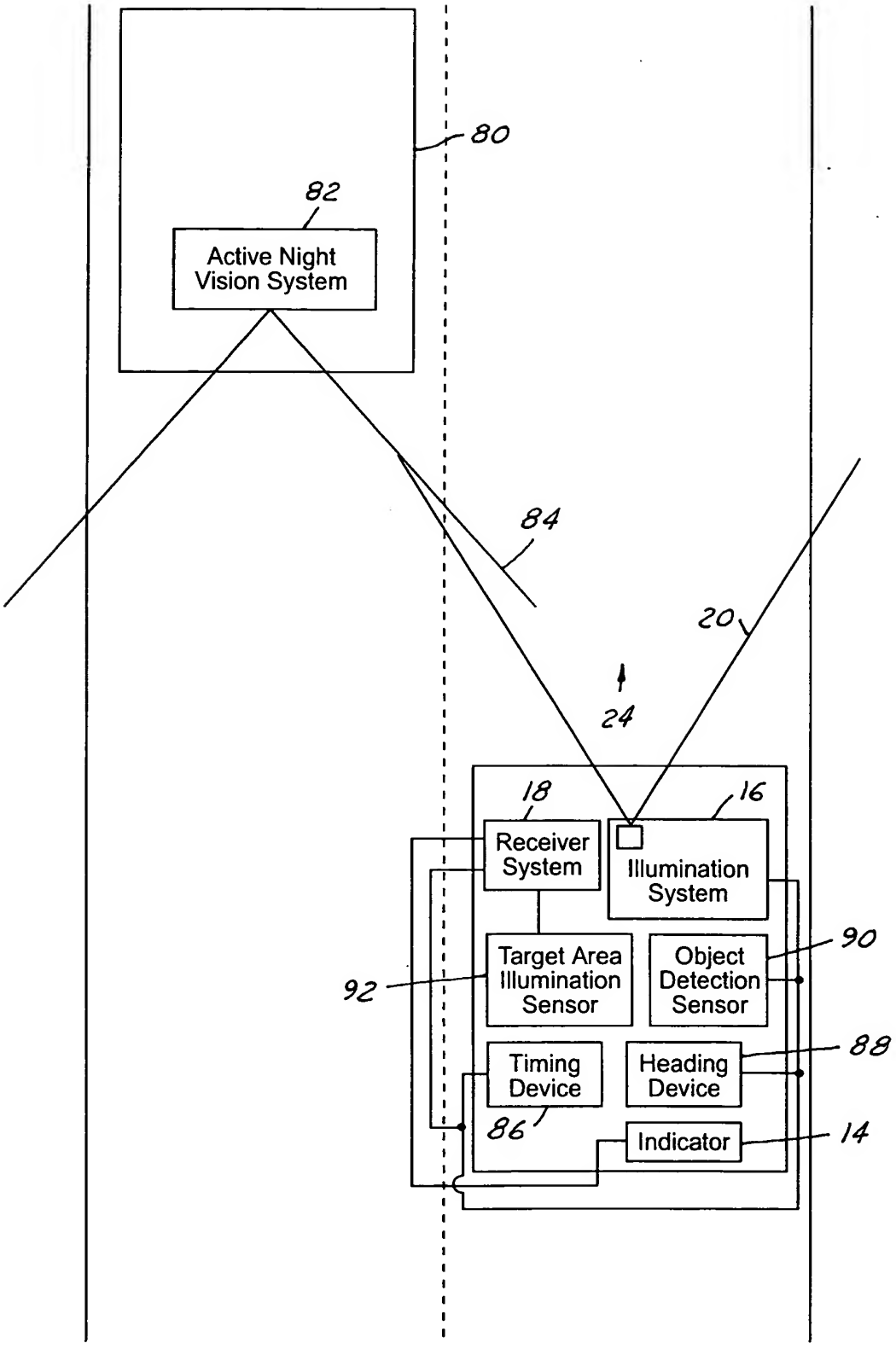
80
82
Active Night Vision System
84
20
24
18
16
Receiver System
Illumination System
Target Area Illumination Sensor
Object Detection Sensor
90
92
Timing Device
Heading Device
88
86
Indicator
14

FIG.5

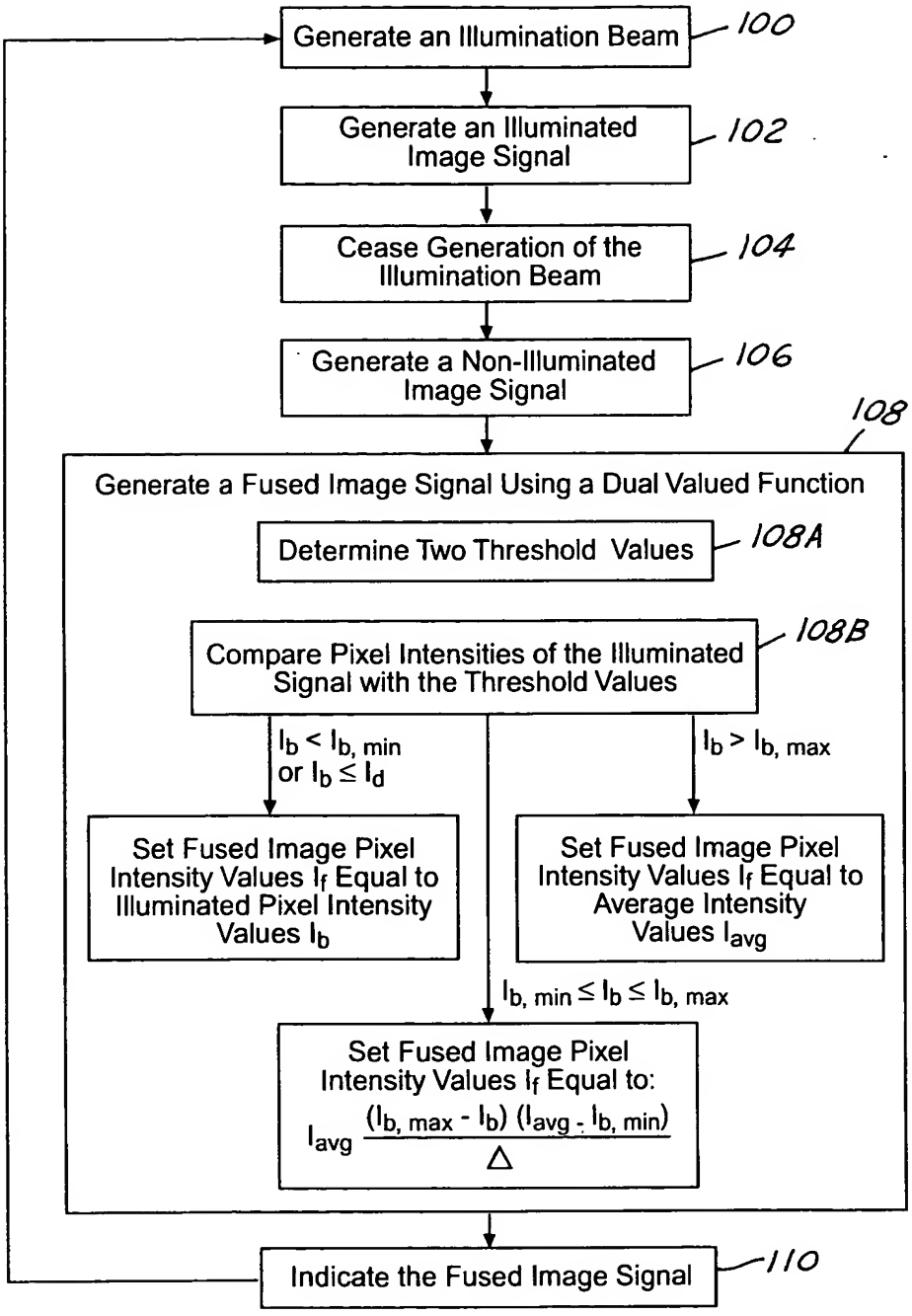
Generate an Illumination Beam
100
Generate an Illuminated Image Signal
102
Cease Generation of the Illumination Beam
104
Generate a Non-Illuminated Image Signal
106
108
Generate a Fused Image Signal Using a Dual Valued Function
Determine Two Threshold Values
108A
Compare Pixel Intensities of the Illuminated Signal with the Threshold Values
108B
$I_b < I_{b, min}$ or $I_b \leq I_d$
$I_b > I_{b, max}$
Set Fused Image Pixel Intensity Values I_f Equal to Illuminated Pixel Intensity Values I_b
Set Fused Image Pixel Intensity Values I_f Equal to Average Intensity Values I_{avg}
$I_{b, min} \leq I_b \leq I_{b, max}$
Set Fused Image Pixel Intensity Values I_f Equal to:
$I_{avg} \frac{(I_{b, max} - I_b)(I_{avg} - I_{b, min})}{\Delta}$
Indicate the Fused Image Signal
110

FIG.6

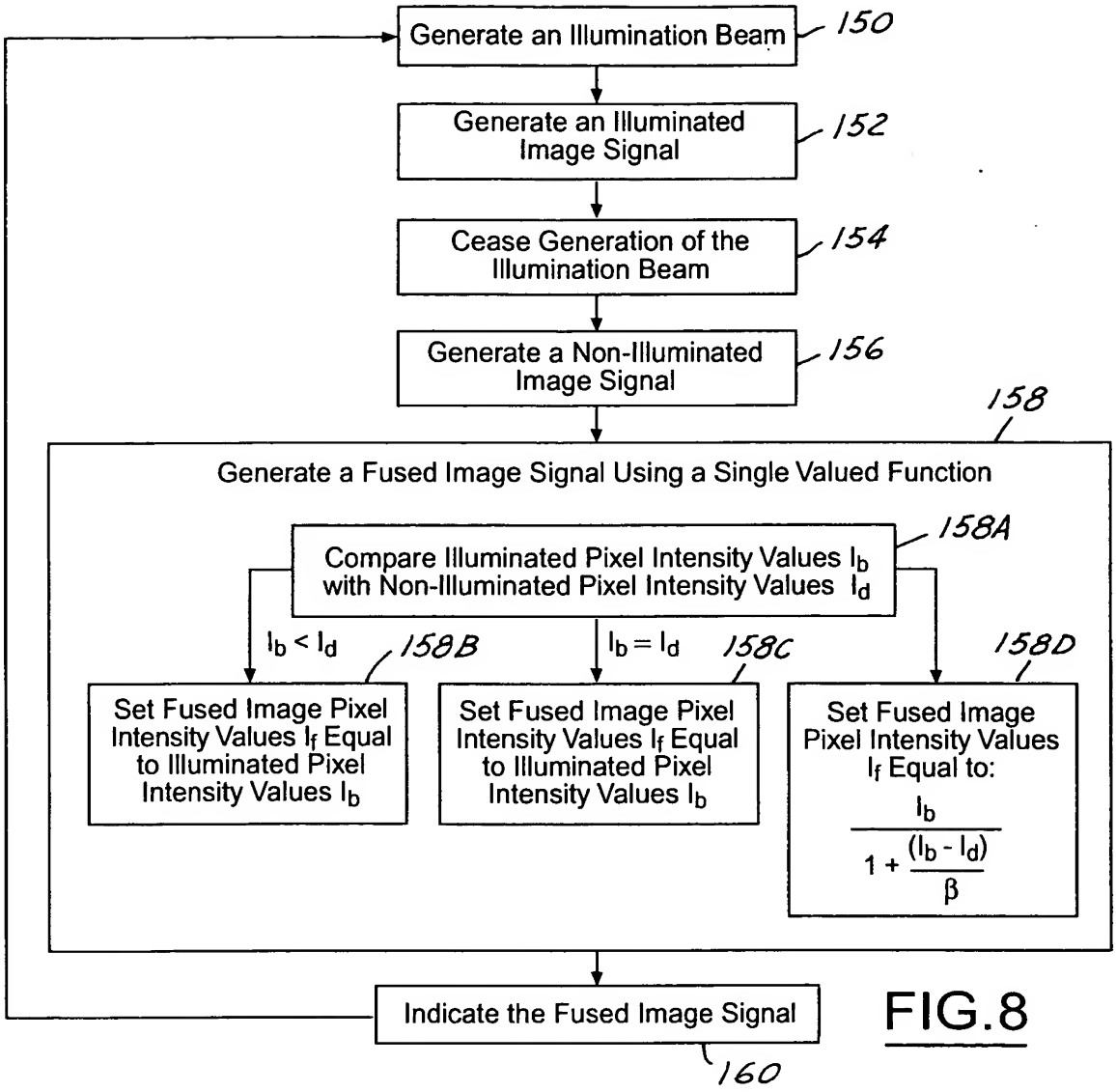
Generate an Illumination Beam
150
Generate an Illuminated Image Signal
152
Cease Generation of the Illumination Beam
154
Generate a Non-Illuminated Image Signal
156
158
Generate a Fused Image Signal Using a Single Valued Function
Compare Illuminated Pixel Intensity Values I_b with Non-Illuminated Pixel Intensity Values I_d
158A
$I_b < I_d$
158B
$I_b = I_d$
158C
158D
Set Fused Image Pixel Intensity Values I_f Equal to Illuminated Pixel Intensity Values I_b
Set Fused Image Pixel Intensity Values I_f Equal to Illuminated Pixel Intensity Values I_b
Set Fused Image Pixel Intensity Values I_f Equal to: $\frac{I_b}{1 + \frac{(I_b - I_d)}{\beta}}$
Indicate the Fused Image Signal
160

FIG.8

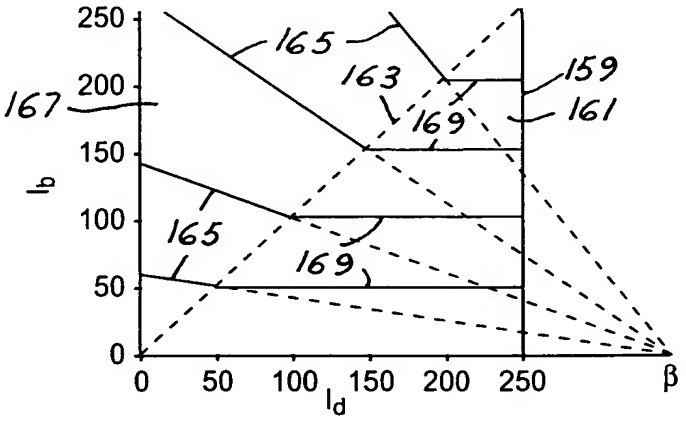
250
200
150
100
50
0
I_b
167
165
163
159
161
169
165
169
0
50
100
150
200
250
I_d
β

FIG.9

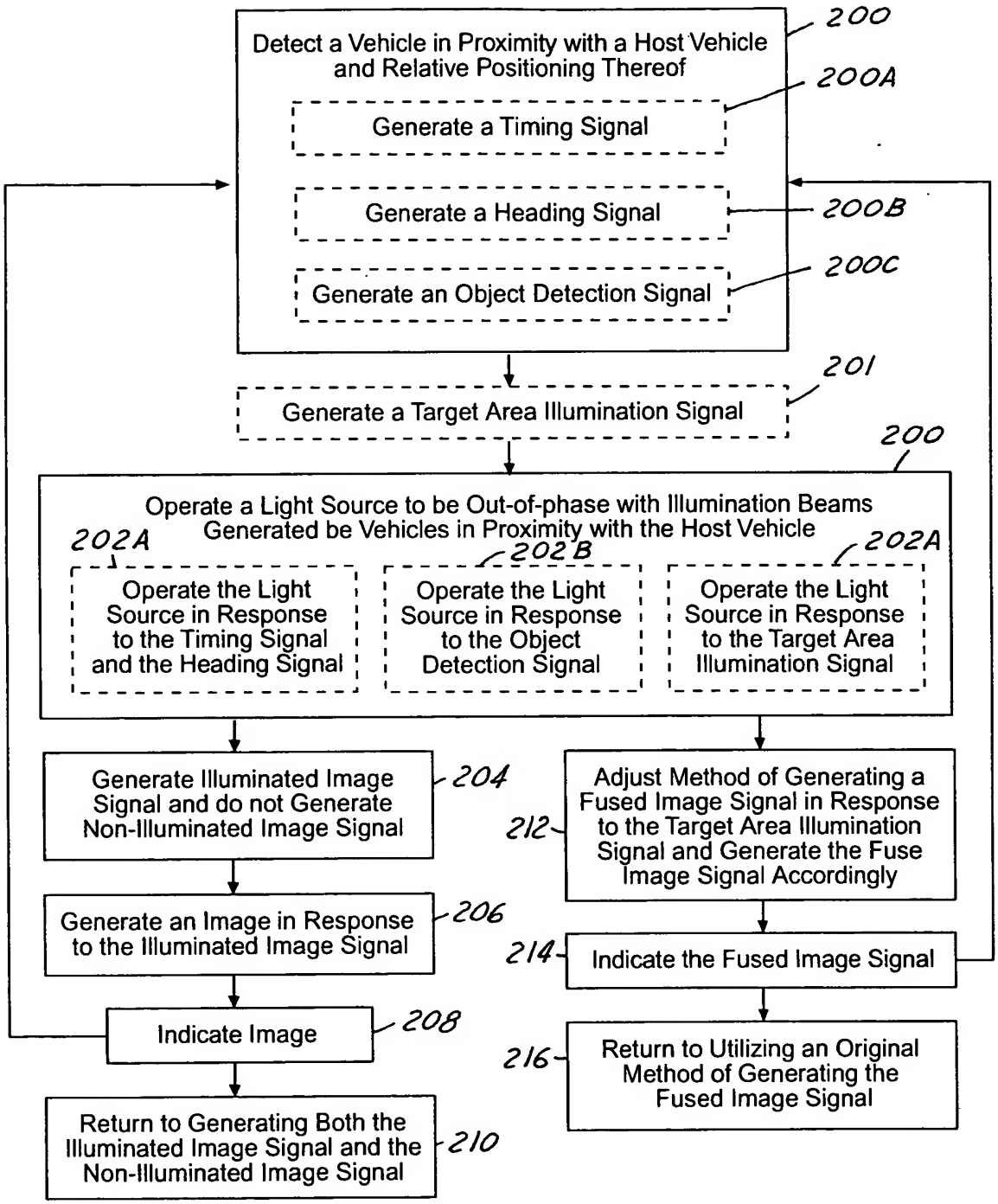
Detect a Vehicle in Proximity with a Host Vehicle and Relative Positioning Thereof
200
Generate a Timing Signal
200A
Generate a Heading Signal
200B
Generate an Object Detection Signal
200C
Generate a Target Area Illumination Signal
201
Operate a Light Source to be Out-of-phase with Illumination Beams Generated be Vehicles in Proximity with the Host Vehicle
200
202A
Operate the Light Source in Response to the Timing Signal and the Heading Signal
202B
Operate the Light Source in Response to the Object Detection Signal
202A
Operate the Light Source in Response to the Target Area Illumination Signal
Generate Illuminated Image Signal and do not Generate Non-Illuminated Image Signal
204
Generate an Image in Response to the Illuminated Image Signal
206
Indicate Image
208
Return to Generating Both the Illuminated Image Signal and the Non-Illuminated Image Signal
210
Adjust Method of Generating a Fused Image Signal in Response to the Target Area Illumination Signal and Generate the Fuse Image Signal Accordingly
212
Indicate the Fused Image Signal
214
Return to Utilizing an Original Method of Generating the Fused Image Signal
216

FIG.10